

HANDOUT 1.1—FUNCTIONS OF SELECTED ECOSYSTEMS

Natural and economic functions of selected ecosystems

Ecosystem	Function
Forests	<ul style="list-style-type: none"> • Flood protection • Provides resins, oils, medicines • Ensures water availability • Provides food and drink • Erosion prevention • Provides fuelwood and charcoal • Provides lumber/timber • Habitats for wildlife species • Supports tourism
Mangrove forests Biomass production up to 30 ton/ha; leaf fall constitutes 20-40% of gross production (10g/m ² -day). Part of this production is exported to adjacent ecosystems. Almost 10% is seafood (finfish, shrimp, etc.)	<ul style="list-style-type: none"> • Flood control • Fish, shrimp, and lobster nursery • Sediment trap (improved runoff to the sea) • Land building (sediment trap) • Protects the shorelines from wave energy and storms • Acts as habitat for birds, crocodiles, and other species of wildlife • Provides a source of food material for nearby coral reefs • Provides materials for construction, fishing, and craft • Tourism and other forms of recreation
Coral reefs High productivity and biomass in oligotrophic (low levels of nutrients) waters: 5-20 g/m ² -day (versus 0.05-0.3 g/m ² -day in adjacent oceanic waters). Can produce up to 400-2000 metric tons Ca/year. High biodiversity, comparable with tropical forests. Marked zonation.	<ul style="list-style-type: none"> • Provide habitat and food for fish and other marine organisms • Protect coastline from wave action • Provide material for sandy beaches • Provide highly valuable fishery products • Contribute to expansion of mangrove and seagrass bed habitats • Generate calcareous rock (composed of calcium carbonate, calcium, or limestone), including entire island systems • Living laboratory for research and education • Tourism and other forms of recreation
Seagrass beds Very high biomass and productivity (leaf grow rate up to 5-10 mm/day)	<ul style="list-style-type: none"> • Function as nurseries for juvenile fish and shellfish • Prevent shoreline erosion by reducing wave energy, and binding the sand together. This also results in improving water clarity • Functions as feeding grounds for turtles, manatees, and some fish species and urchins • Export food materials to nearby coral reefs